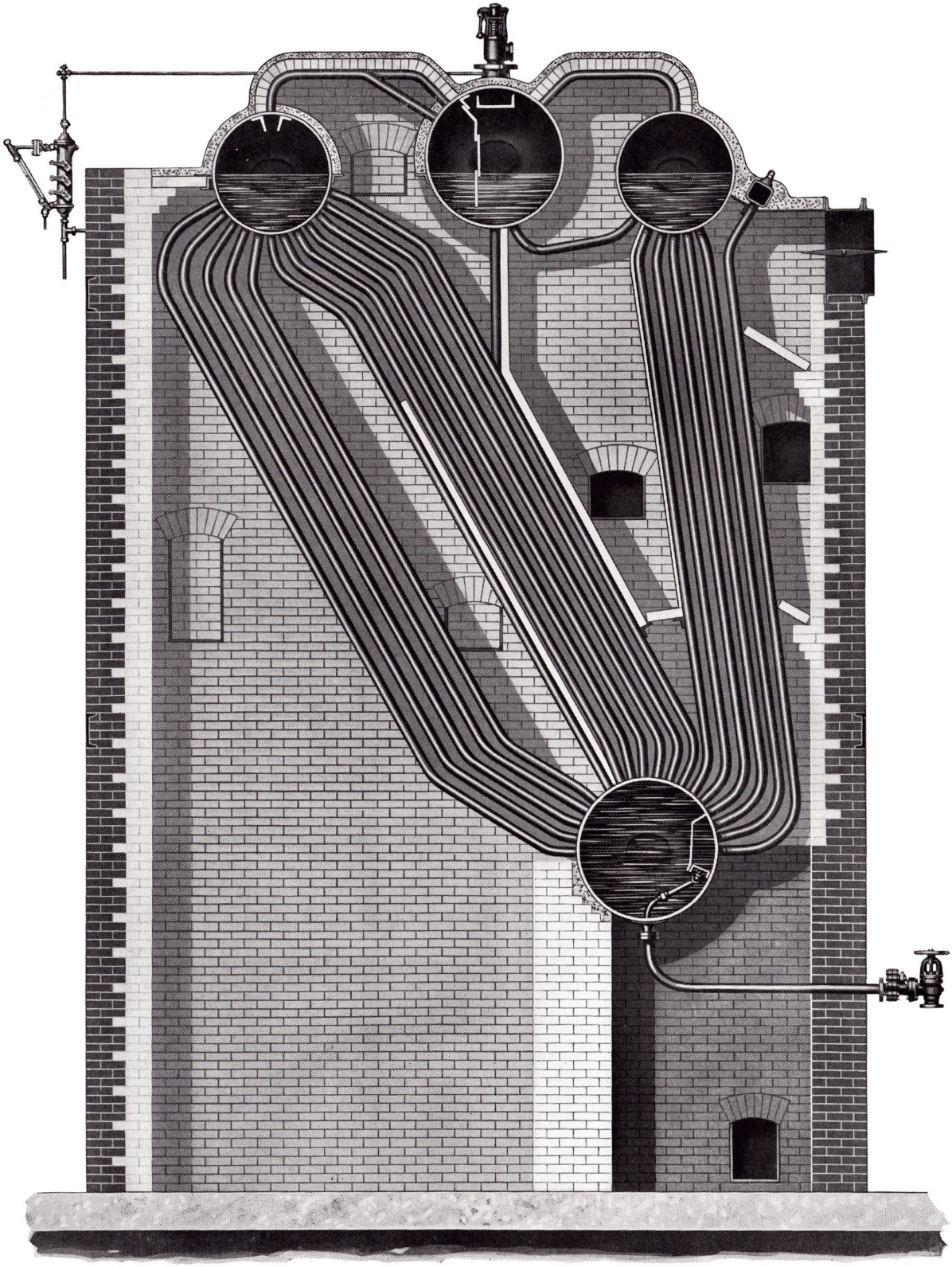
THE EDGE MOOR BENT TUBE BOILER

FOUR-DRUM TYPE

EDGE MOOR IRON COMPANY

ESTABLISHED 1868

EDGE MOOR, DELAWARE



THE EDGE MOOR BENT TUBE BOILER

REGISTERED PROFESSIONAL ENGINEER
GEORGE W. O'NEILL
MECHANICAL
NOVA SCOTIA

FOUR-DRUM TYPE

The Edge Moor Four-Drum Bent Tube Boiler has been designed especially to meet the increasing demand for high pressures, ratings and capacities. It can be built in standard construction with either riveted or hammer-welded drums for working pressures up to 450 pounds per square inch, and in special construction for higher pressures. With seamless steel drums, it can be built for any desired pressure.

The boiler consists primarily of a feed-water header, four drums and three banks of tubes, built throughout in strict conformity with the requirements of the A. S. M. E. Code and all State or Municipal regulations that may apply where the installation is made.

It is so constructed as to be well suited for service with such modern equipment as superheaters, economizers, water walls and air pre-heaters. Operated without these accessories, in the smaller plant, it is capable of delivering high efficiencies with a minimum of maintenance expense.

The rear bank of tubes is designed to create progressive circulation of the feed water, which is introduced into a forged steel header located behind the upper rear drum. The water flows downward from this header through one row of tubes to the lower drum, where it is directed upward, by means of internal baffles, through two rows of tubes to the upper rear drum. Here it enters the main circulation of the boiler, flowing down to the lower drum through the remainder of the rear bank of tubes, up to the upper front drum through the front tube bank and down to the lower drum through the middle bank of tubes.

The separation of the comparatively cool feed water from the main circulation of the boiler results in an economizer effect which produces a greater temperature difference between the gases of combustion and the water. This gives a high rate of heat transfer and a low flue gas temperature.

Steam from either the front or rear upper drum is carried over to the upper middle or steam drum by means of short cross-over tubes at the top. Water collecting in this drum enters the boiler circulation by means of the half-row of tubes leading to the lower drum. The steam drum, being thus isolated from the boiler circulation, produces practically dry steam.

There is ample space between the tubes of the front bank for the installation of a large superheater. The spacing of the tubes is so arranged that any

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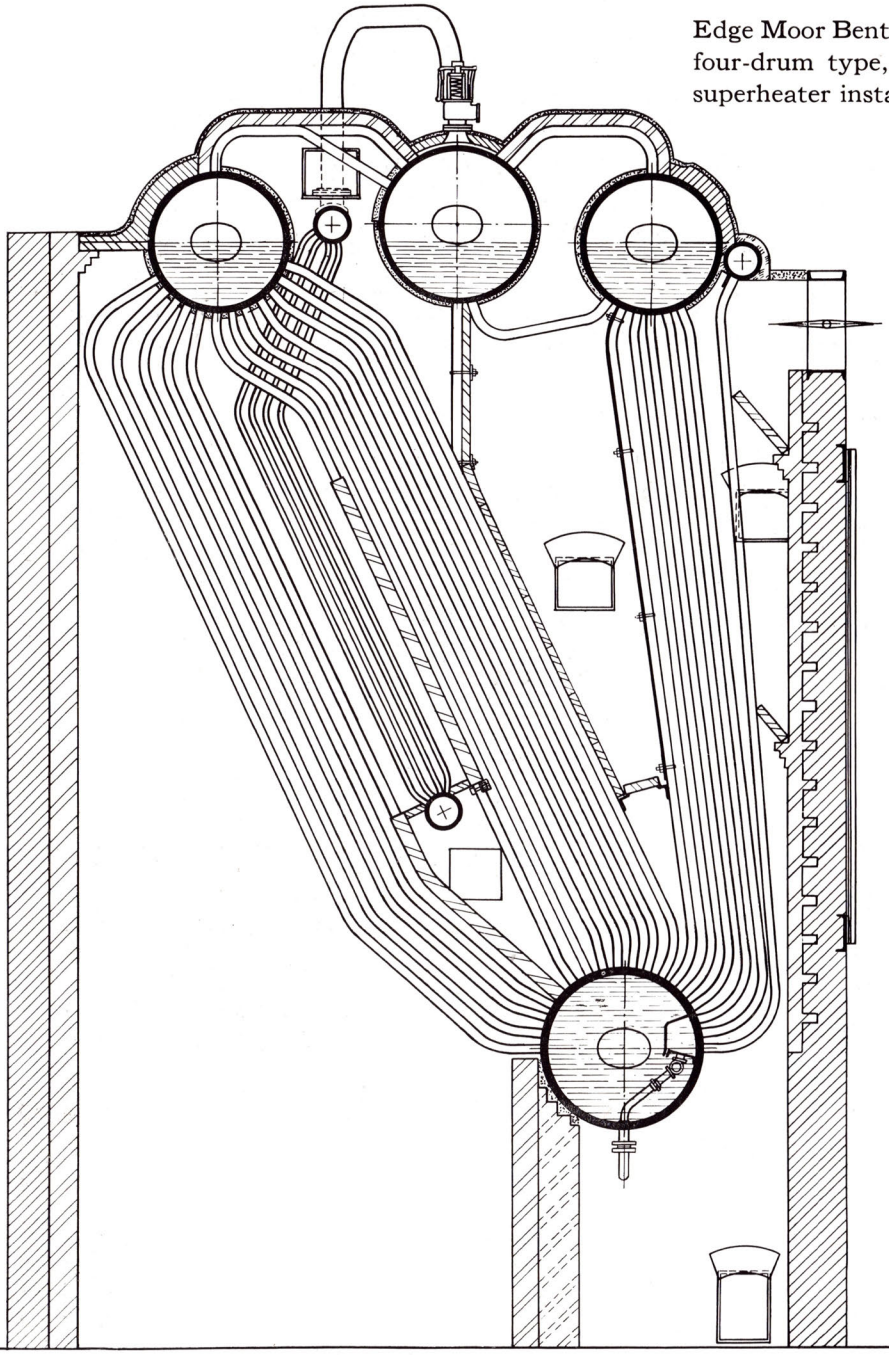

Edge Moor Bent Tube Boiler, four-drum type, with Foster superheater installed.

single tube can be removed and replaced without disturbing any other tube.

The baffling may be arranged three- or four-pass and may be made so that the gases can be taken off at the top rear or bottom of the boiler. Doors in the side walls permit ready access to the baffles, which are easily repaired or replaced.

The drum shells are constructed of

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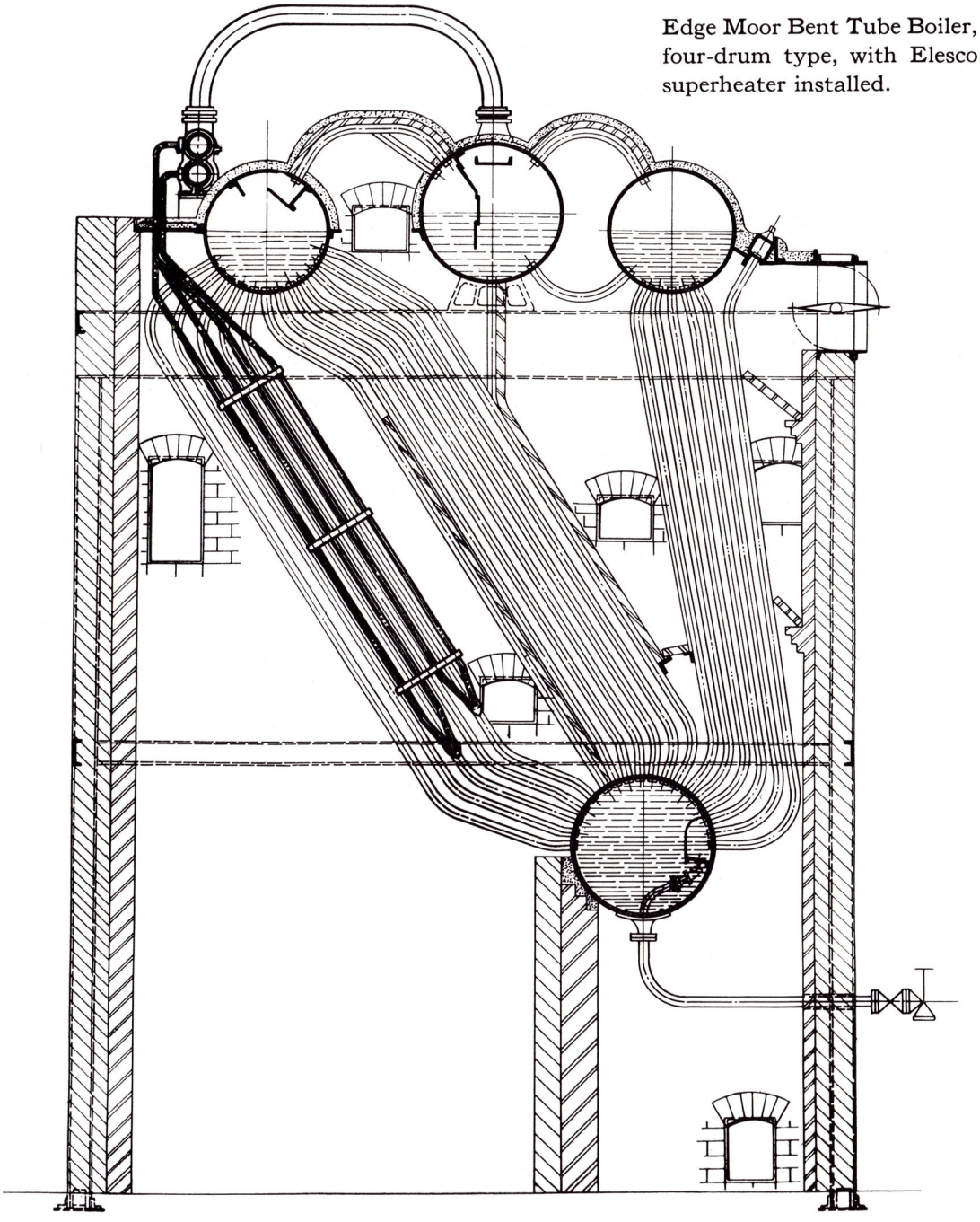

Edge Moor Bent Tube Boiler, four-drum type, with Elesco superheater installed.

single sheets of proper thickness for the intended pressure, which are rolled to a true circle. The longitudinal seams are double-butt-strapped, double- or triple-riveted joints.

The butt straps are formed to fit the internal and external surfaces of the drum plates with a metal-to-metal contact before the rivets are driven. The seams and rivets are made tight by

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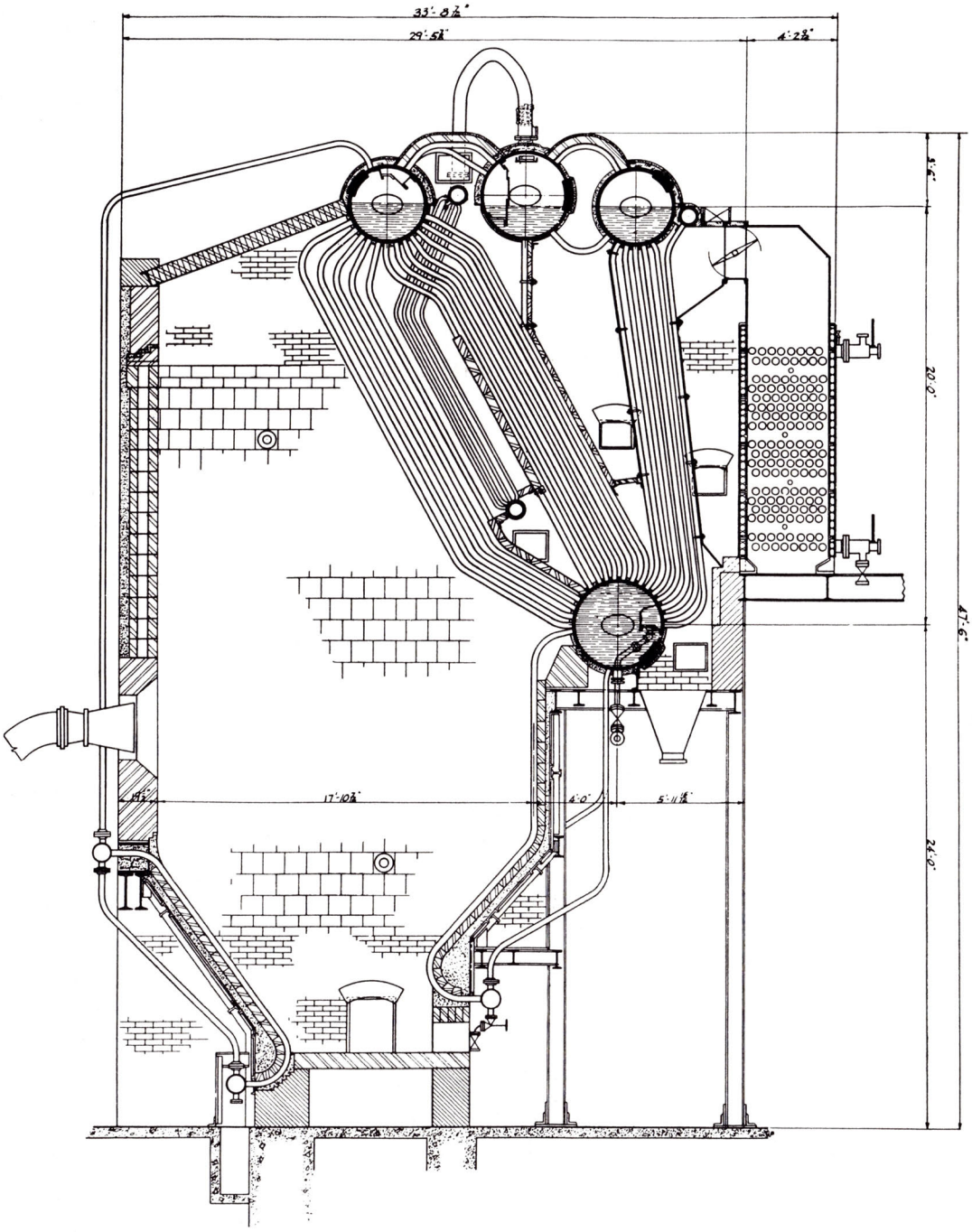

Sectional view of one of three 695 h. p. Edge Moor Four-Drum Bent Tube Boilers for installation in plant of Bedford Pulp & Paper Co., Big Island, Va. Working pressure, 400 lbs.; superheat, 100°; furnace volume, 5600 cu. ft.; maximum rating, 300%. Edge Moor Water Walls, 356 sq. ft.

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caulking on the interior of the shell.

Dished heads are provided for both ends of each drum. At least one head in all sizes, and both heads in the larger sizes, are provided with 12″ x 16″ manholes. All drum heads are flanged, and the external part of the flange is machined to give a metal-to-metal contact between the head and the drum before the rivets are driven.

All rivet holes are drilled from the solid plate with butt straps and heads in position. Rivets are of standard soft steel, brought to the proper heat before driving, then driven by an hydraulic riveter and held until black.

All parts are readily accessible for inspection, cleaning or repairs. The supporting steel is entirely independent of the brickwork and is arranged to permit full expansion and contraction without resultant strain on either boiler or brickwork.

The four-drum type boiler can be furnished in units containing up to a maximum of approximately 20,000 square feet of heating surface, and is readily adaptable to firing with any fuel, solid, liquid or gaseous.

The Edge Moor Four-Drum Boiler is a result of our experience with our single-pass boiler and our three-drum bent tube type. It is designed and built to embody the latest developments in boiler engineering, by an organization with ample resources and a background of a half-century of successful boiler building. No untried principles and no radical departures from accepted sound engineering practice are included.

In every factor important to power plant operation and management, this boiler meets the exacting demands of present-day practice.

We offer full co-operation and the assistance of a skilled engineering staff in the planning of new steam generating plants.

PRINTED IN U. S. A.

CATALOG No. 67

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EDGE MOOR, DELAWARE

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